REMARKS/ARGUMENTS

Reexamination of the captioned application is respectfully requested.

A. SUMMARY OF THIS AMENDMENT

By the current amendment, Applicants basically:

1. Amend claims 1- 2, 7 - 8, 11 – 13, 15 – 16, 18 – 20, 22, and 25 – 26, primarily to replace what may be construed as functional language with more structural nomenclature.
2. Correct the dependency of claim 43.
3. Thank the Examiner for the indication of allowable subject matter in claims 12-19 and 35-42.
4. Respectfully traverse all prior art rejections.

B. PATENTABILITY OF THE CLAIMS

Claims 1-10 and 27-33 stand rejected under 35 USC §102(e) as being anticipated by U.S. Publication 2003/0012267 to Jitsukawa et al. Claims 11, 20-26, 34 and 43-49 stand rejected under 35 USC §103(a) as being unpatentable over U.S. Publication 2003/0012267 to Jitsukawa et al in view of U.S. Patent 5,790,606 to Dent. All prior art rejections are respectfully traversed for at least the following reasons.

Applicant's independent claims 1 and 27 are conspicuously directed to a joint searcher and channel estimator/method which is arranged to essentially *jointly and concurrently consider* dimensionally differentiated plural signals provided by the antenna structure for determining both a time of arrival and channel coefficient.

U.S. Publication 2003/0012267 to Jitsukawa et al. does not teach or suggest, e.g., *joint and concurrent* consideration of dimensionally differentiated plural signals as required by independent claims 1 and 27.

As evident from paragraph [0033]+ of Jitsukawa, phase difference estimators 61_1 through 62_L are dedicated and thus confined to their respective time periods t_1 through t_L. That is, estimator 62_i uses sample data at a discrete time t_i to perform correlation calculations and estimate phase difference among antenna elements at the time (t_i) in question.

In Jitsukawa the phase difference for each i^{th} sample is calculated according to Equation 5 (reproduced below). Equation 5 compares the complex baseband value of the signal between antenna index n+1 and antenna index n. Thus, Equation 5 of Jitsukawa implements a sequential rather than a joint and concurrent determination.

$$Di = \frac{1}{N-1}\sum_{n=1}^{N-1}\frac{x_{(n+1)i}}{x_{ni}} = \frac{1}{N-1}\sum_{n=1}^{N-1}\frac{a_{(n+1)i}\exp[j\{\alpha + n\Delta\theta i\} + \eta_{(n+1)i}}{a_{ni}\exp[j\{\alpha + (n-1)\Delta\theta i\}] + \eta_{ni}}$$

Thus, in Jitsukawa the correlation is made discretely, and therefore the correlation is not jointly and essentially concurrently based dimensionally differentiated plural signals. Further in this regard, see, e.g., paragraph [0037]+.

Moreover, the numerical expressions of Jitsukawa such as Expression 5 are based only on one index (in expression 5 the index "n" pertains to the antenna number). The single index expressions of Jitsukawa prove that Jitsukawa does not jointly consider data organized as a function of two indices.

By contrast, Applicant calculates the phase difference for each i^{th} sample jointly, e.g., utilizing all the baseband values jointly and concurrently. See, for example, the Fast Fourier Transform equations of Applicant's disclosure which indicates the joint utilization of all baseband values.

In view of the foregoing and other considerations, all claims are deemed in condition for allowance. A formal indication of allowability is earnestly solicited.

C. MISCELLANEOUS

The Commissioner is authorized to charge the undersigned's deposit account #14-1140 in whatever amount is necessary for entry of these papers and the continued pendency of the captioned application.

Should the Examiner feel that an interview with the undersigned would facilitate allowance of this application, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,

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